

Section 9. Catfish

Introduction

There are several catfish species in the Chesapeake Bay but not all are native. Channel catfish, blue catfish, and flathead catfish are introduced species. While white catfish, brown bullhead, and yellow bullheads are indigenous. Channel catfish were introduced into the Potomac in 1889-1905 and weren't seen in Maryland's portion of the Bay until 1958. Blue catfish were also stocked in the Potomac during the 1889-1905 time period and in Virginia tributaries in 1974. They weren't seen in significant numbers in the Potomac until recently. Flathead catfish were both accidentally and intentionally released into the James River between 1965-1977 and have dispersed since then.

In the 1990s, during the period of development for many of Chesapeake Bay Program's Fishery Management Plans (CBFMP), the need for a catfish FMP was explored. Due to recreational and commercial fisheries apparent healthy status at that time and the lack of species-specific data, a technical report was completed rather than a FMP. The technical report recommended a survey of the status of catfish populations in the Bay. Maryland DNR biologists monitor white catfish and channel catfish annually. There are minimum size limits on catfish for both the commercial and recreational fisheries in Maryland.

Stock Status

While there are no regional or coastal stock assessments of catfish, in 1998 the Chesapeake Bay Program compiled a characterization of the catfish populations in the Chesapeake Bay. This characterization includes 1996 estimates of mortality rates for channel and white catfish by tributary. The most recent calculations of mortality rates for these tributaries were reported in 2000 (Sadzinski et al 2000). Total mortality rates for channel and white catfish have increased over the four-year period (Table 9.1).

Channel catfish are also annually monitored by the Estuarine Juvenile Finfish Survey (EJFS). Geometric mean catch of young-of-the-year (YOY) channel catfish appears to have decreased over time. Data from Virginia show a peak index in the mid nineties and a decreasing trend since that time. There are many possible explanations for these declines, but decreased phosphate levels in the upper Bay are hypothesized to be a significant factor (Mowrer 2004). Blue catfish have very similar habitat requirements as channel catfish, and these species could be competing for habitat, especially in the Potomac River and Virginia.

Biologists for the Maryland DNR have witnessed an increase in incidental blue catfish catches and an expanding length range on the Potomac River during the spring striped bass spawning stock survey (Durell, pers comm.). There is data to support the evidence that the blue catfish population on the Potomac has been increasing in mean length since 1993 and has begun spawning. Despite sharing habitat and similar life

histories, young-of-the-year blue catfish have not appeared in the EJFS. Similarly, YOY white catfish have not appeared in significant numbers in this survey.

Fishery Statistics

Since 1980, commercial catfish landings have been generally variable over time, with a slight increase (Figure 9.1). Although catfish landings have been reported by species since 1996, harvest data are generally available for just “catfish” or combined species. Catfish are caught commercially in fish pots, fyke nets, haul seines, and pound nets. Channel catfish are harvested for food, aquaculture, and for use in fee-fishing ponds in the Midwest.

Estimated recreational landings of catfish appear variable over time (Figure 9.2). These data are from the Marine Recreational Finfish Sportfishing Survey which often does not adequately sample fishermen in the upper Bay and tributaries as well as marine areas. This data set also reports catfish as combined species. The estimated recreational harvest is only about 10-20% of the commercial harvest.

Emerging issues

Not much is known about the catfish populations in the Bay. They are not directly monitored but populations appear to be changing. Turbidity is an important aspect of their habitat, and with efforts to improve water quality turbidity should decrease. The apparent increase in the Potomac blue catfish population should also be monitored more closely. Blue catfish are predators of American shad and increased numbers may hinder the restoration efforts on the Potomac River. With ecosystem-based fisheries management, catfish should be monitored as indicators of habitat quality and as predators.

References

- Durell, Eric. 2005. Striped Bass Stock Assessment, unpublished data.
- Mowrer, J. 2005. Resident and migratory juvenile finfish recruitment survey. *In* Stock assessment of selected resident and migratory recreational finfish species within Maryland's Chesapeake Bay. Maryland Department of Natural Resources, Report F-54-R. Annapolis, Maryland.
- Sauls, B., D. Dowling, J. Odenkirk, E. Cosby. 1998. Catfish populations in the Chesapeake Bay. Chesapeake Bay Program, EPA 903-R-98-001. Annapolis, Maryland.
- Sadzinski, R., A. Jarzynski, and P. Piavis. 2005. Stock assessment of selected adult resident and migratory finfish in Maryland's Chesapeake Bay. Maryland Department of Natural Resources, Report F-54-R. Annapolis, Maryland.
- Virginia Institute of Marine Science. 2005. Juvenile Fish and Blue Crab Trawl Survey. <http://www.fisheries.vims.edu>.

Figure 9.1. Commercial landings of catfish from Maryland and Virginia, 1980-2004

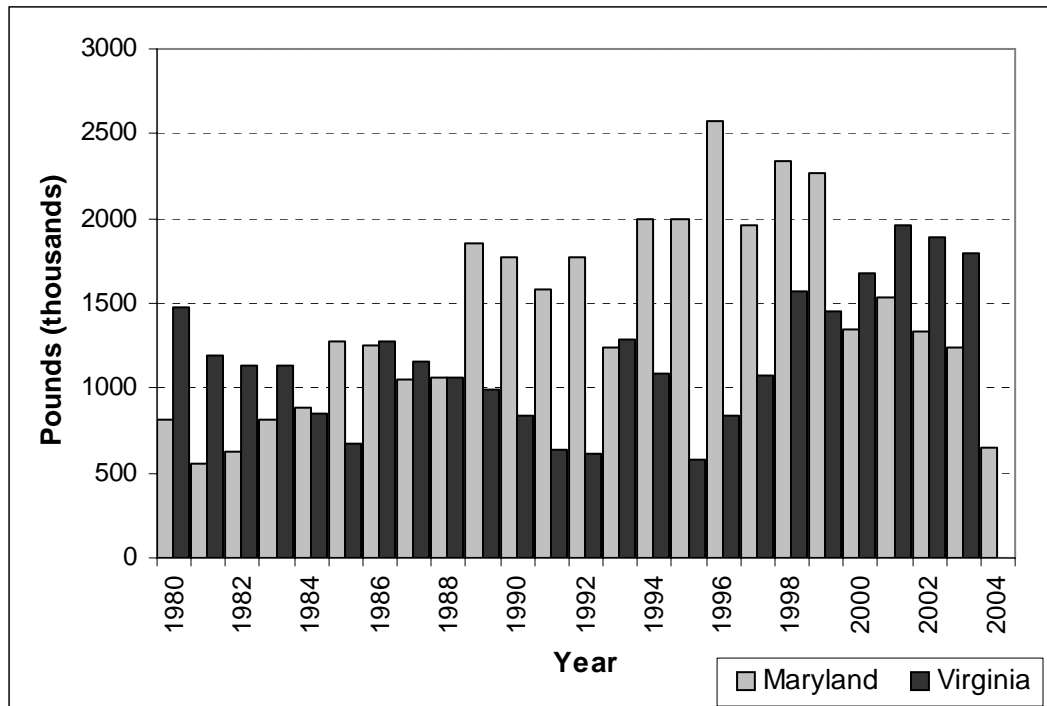


Figure 9.2 Estimated Recreational Landings of Catfish from Maryland and Virginia, 1981-1994

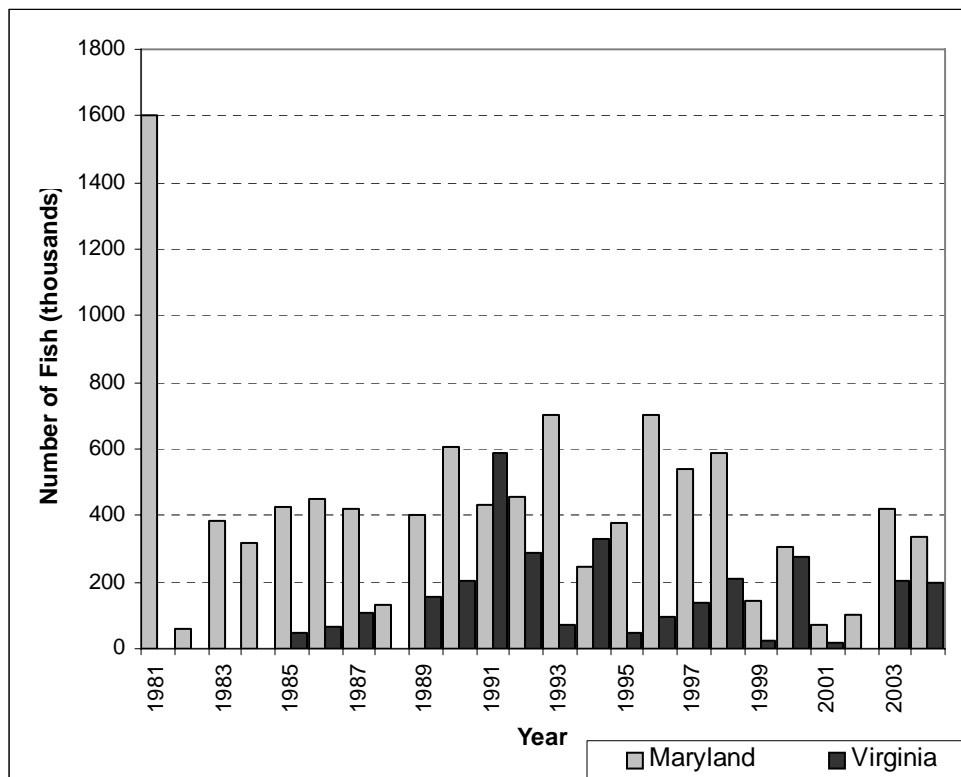


Table 1. Mortality rates of Channel and White catfish in the Choptank and Nanticoke Rivers

Choptank	1995 Relative Mortality	1996 Relative Mortality	1996 Total Mortality	2000 Total Mortality
Channel	0.25	0.6	0.15	0.94+/-0.40
White	2.6	0.6	--	---
Nanticoke	1995 Relative Mortality	1996 Relative Mortality	1996 Total Mortality	2000 Total Mortality
Channel	---	----	0.3	0.48+/-0.17
White	1.3	4.4	----	----